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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/221,291	12/23/1998	MARTIN H. GRAHAM	003921.P005	4813

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EXAMINER	
BURD, KEVIN MICHAEL	
ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/221,291	GRAHAM, MARTIN H.	
	Examiner	Art Unit	
	Kevin M. Burd	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This office action, in response to the remarks filed 11/15/2004, is a non-final office action.

Response to Arguments

2. Applicant's arguments with respect to claims 19-25 have been considered but are moot in view of the new ground(s) of rejection. Gord discloses transmitting bi-phasic pulses as shown in figure 8 and described in the previous office action. In the remarks, Applicant states, "the claims require a first and second bi-phasic pulse of opposite polarity. In terms of Gord, this means Gord must transmit 10101010." This is true but Gord could also transmit a sequence of 01010101 as well. A new reference, Vanderpool et al (US 5,654,978), teaches a method of encoding information in a pulse position modulation system. A time delay between a first pulse and a second pulse is used to encode data. For example, a short time delay between the first and second pulses may indicate a logical "0", while a longer delay may be used to encode a logical "1" as stated in claim 1, lines 10-18. The delays can represent a plurality of data bits (column 3, lines 8-17 and column 5, lines 37-40). These references are used in combination to reject the claims as stated below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 19-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gord et al (US 5,999,848) in view of Vanderpool et al (US 5,654,978).

Regarding claims 19 and 25, Gord discloses a method of encoding a signal shown in figures 6 and 8. A first biphasic pulse has a first portion of a first polarity and a second portion of a second polarity. Following the first pulse, a waiting period where no information is sent occurs. After the waiting period, a second biphasic pulse is transmitted, having two portions, one with a first polarity and one with a second polarity. The time periods and amplitudes are also shown in figure 6. The biphasic pulse transmission is described in column 16, lines 25-43. Gord does not disclose the duration of the waiting a time period being selected to represent a plurality of data bits. Vanderpool teaches a method of encoding information in a pulse position modulation system. A time delay between a first pulse and a second pulse is used to encode data. For example, a short time delay between the first and second pulses may indicate a logical "0"", while a longer delay may be used to encode a logical "1" as stated in claim 1, lines 10-18. The delays can represent a plurality of data bits (column 3, lines 8-17 and column 5, lines 37-40). Figures 2-4 show the pulses are detected at a time after the first pulse is transmitted. Figure 4 shows the use of bi-phasic pulses in the transmission system. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the pulse position modulation system for encoding additional

data bits as stated by Vanderpool into the system of Gord. Each possible choice, for the data pulse, of delay time and transmission code may represent a separate set of multiple data bits (column 2, lines 3-5). Therefore, more information can be transmitted than before during the same transmission period.

Regarding claim 20, the biphasic pulse has no DC component since the positive amplitude is equal to the negative amplitude.

Regarding claim 21, the amplitude and pulse width of the pulses are shown in figure 6 of Gord.

Regarding claim 22, figure 6 of Gord shows the biphasic pulse is encoded. One amplitude represents a "1" bit while a second amplitude represents a "0" bit.

Regarding claim 24, the combination of Gord and Vanderpool discloses a method for encoding a signal above. The combination does not disclose the transmission occurs over a twisted wire pair. However, Gord discloses the transmission occurs over a wire transmission system in column 16, lines 16-24. It would have been obvious for one of ordinary skill in the art at the time of the invention transmit the signals generated by the combination in any conventional wired transmission system that allows the information to be received at the desired location free of interference.

4. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gord et al (US 5,999,848) in view of Vanderpool et al (US 5,654,978) further in view of Pernyeszi (US 5,969,547).

Regarding claim 23, the combination of Gord and Vanderpool discloses a method for encoding a signal stated in paragraph 3. The combination does not disclose the pulse width of each of the pulses represents at least one bit. Pernyeszi discloses pulse widths carry the information with a pulse's width representing a digital value (column 1, lines 17-25). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate Pernyeszi's method of pulse width encoding data into the method of the combination of Gord and Vanderpool to transmit more information than either system is capable alone. Information can be transmitted over less time and the transmitter will consume less power due to the limited transmission time.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
3/15/2005

KEVIN BURD
PRIMARY EXAMINER